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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/134,472	08/14/1998	DOUGLAS T. ROSS	227662XY4-S	8035

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EXAMINER	
LEWIS, PATRICK T	

ART UNIT	PAPER NUMBER
1623	

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/134,472	ROSS ET AL.	
	Examiner	Art Unit	
	Patrick T. Lewis	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-11 and 23-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-11 and 23-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 August 1998* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Prosecution Reopened

1. In view of the Appeal Brief filed on April 2, 2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejections are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

SAJ 2/14/06

Dr. Shaojia A. Jiang
Supervisory Patent Examiner
Technology Center 1600

Applicant's Response Dated April 2, 2004

2. Claims 1-4, 6-11 and 23-38 are pending. An action on the merits of claims 1-4, 6-11 and 23-38 is contained herein below.

3. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

4. Applicant's arguments with respect to claims 1-4, 6-11 and 23-38 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,140,357 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's arguments with respect to claims 1-4, 6-11 and 23-38 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. 6,140,357 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's arguments with respect to claims 1-4, 6-11 and 23-38 under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al. US 6,140,357 ('357) have been considered but are moot in view of the new ground(s) of rejection.

7. Applicant's arguments with respect to claims 1-4, 6-11 and 23-38 under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al. U.S. 6,331,537 ('537) have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

8. The listing of references in the specification, applicant's arguments/remarks or other correspondence documents is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. The Teri et al. reference and others not properly cited on an information disclosure statement or PTO-892 are not of record and have not been considered.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-4, 7-10 and 23-38 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-7 of U.S. Patent No. 6,140,357 in view of Merriam-Webster's Collegiate Dictionary, Deluxe Edition, published by Merriam-Webster (1998), Inc., Springfield, Mass., page 53 (Webster). Although the conflicting claims are not identical, they are not patentably distinct.

The instant claims are drawn to a method for treating a nerve-related vision disorder or treating memory impairment in a mammal in need thereof comprising administering an effective amount of an N-heterocyclic ring compound containing a carboxylic acid or carboxylic acid isostere moiety attached to the 2-carbon of the N-heterocyclic ring.

The instant invention differs from the claims of the '357 patent in that the method of the '357 patent is drawn to the treatment of neuorological disorders broadly; however, the treatment of Alzheimer's disease (see claim 5 of '357) reads upon "treating memory impairment". As interpreted by the instant specification, "memory impairment" embraces "any disorder in which memory deficiency is present" (page 30, lines 17-23). Webster teaches that Alzheimer's disease is a degenerative disease of the central nervous system characterized especially by premature senile mental deterioration. Thus, the instant invention reads on the treatment of mammals having Alzheimer's disease.

The instant invention also differs from the claims of the '357 patent in that the heterocyclic compounds employed in the methods differ in scope; however, the compounds of the '357 patent contain an N-heterocyclic compound containing a carboxylic acid isostere moiety attached to the 2-carbon of the N-heterocyclic ring. Page 26 of the instant specification teaches that $-CON(R^3)_2$ is a carboxylic acid isostere. The carbonyl moiety attached to the heterocyclic ring of the '357 patent at the 2-carbon position reads upon a carboxylic acid isostere wherein Y is NR_2. Additionally, claim 3 of the '357 patent explicitly contemplates the use of neurotropic compounds having affinity for FKBP-12 (the instant claim 4 conveys that the heterocyclic compounds containing a carboxylic acid isostere at the 2-carbon position posses this activity). Although the '357 patent is not limited to the use of heterocyclic compounds wherein a carboxylic acid isostere is attached at the 2-carbon, it would have been obvious to one of ordinary skill in the art at the time of the invention that the '357 patent embraces the use of such compounds. Because the variable Y only reads on O or NR_2 and since the '357 patent explicitly embraces the use of heterocyclic compounds having affinity for FKBP-12, one of ordinary skill in the art would have readily envisioned the use the instantly recited heterocycle containing a carboxylic acid isostere at the 2-carbon position (i.e. compounds wherein Y is NR_2) for treating a mammal having a memory impairment. Thus, granting a patent on the instantly claimed invention would result in inappropriate extension of the term of what was already patented in US 6,140,357.

11. Claims 1-4, 7-11 and 23-38 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8-11 and 14-18 of U.S. Patent No. 6,331,537 in view of Merriam-Webster's Collegiate Dictionary, Deluxe Edition, published by Merriam-Webster (1998), Inc., Springfield, Mass., page 53 (Webster). Although the conflicting claims are not identical, they are not patentably distinct.

The instant claims are drawn to a method for treating a nerve-related vision disorder or treating memory impairment in a mammal in need thereof comprising administering an effective amount of an N-heterocyclic ring compound containing a carboxylic acid or carboxylic acid isostere moiety attached to the 2-carbon of the N-heterocyclic ring.

The examined claims differ from the invention of '537 in that '537 teaches the treatment of neurological disorders broadly and the heterocyclic compounds employed are not of identical scope; however, the treatment of Alzheimer's disease (see claim 11 of '537) reads upon "treating memory impairment". As interpreted by the instant specification, "memory impairment" embraces "any disorder in which memory deficiency is present" (page 30, lines 17-23). Webster teaches that Alzheimer's disease is a degenerative disease of the central nervous system characterized especially by premature senile mental deterioration. Thus, the instant invention reads on the treatment of mammals having Alzheimer's disease. Claims 17-18 of '537 explicitly contemplates the use of a N-heterocyclic ring compound containing a carboxylic acid or carboxylic acid isostere moiety attached to the 2-carbon of the N-heterocyclic ring.

Although the '537 patent is not limited to the use of heterocyclic compounds wherein a carboxylic acid or isostere thereof is attached at the 2-carbon, it would have been obvious to one of ordinary skill in the art at the time of the invention that the '537 patent embraces the use of such compounds as claim 18 of '537 explicitly sets forth the use of such compounds. Thus, granting a patent on the instantly claimed invention would result in inappropriate extension of the term of what was already patented in US 6,331,537.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 1-4, 6-8, and 23-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "isostere" renders all claims reading upon said term indefinite. Applicant defines an "isostere" as "different compounds that have different molecular formulae but exhibit the same or similar properties". This definition is insufficient to apprise one of ordinary skill in the art of the metes and bounds of the heterocyclic compounds. The examples of "isosteres" presented on page 26 of the specification are noted; however, the passage merely sets forth a vast, non-limiting list of possible moieties and does not particularly and distinctly set forth what chemical moieties are included or excluded. There is no discernable pattern in regards to a core chemical

structure set forth. Furthermore, Wermuth et al. Pure & Appl. Chem. (1998), Vol. 70, pages 1129-1143 (Wermuth), which is a glossary of terms used in medicinal chemistry, defines "isosteres" as "molecules or ions of similar size containing the same number of atoms and valence electrons, e.g., O^{2-}, F^{-}, Ne". The examples set forth by the specification are not consistent with the art-accepted meaning of "isostere". The examiner also notes that "-COOH" is included in applicant's examples of carboxylic acid isosteres; "-COOH" is a carboxylic acid moiety. Although applicant may claim an invention broadly; however, applicant still bears the burden of particularly and distinctly setting forth the metes and bounds of said invention.

14. The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

> Subject to the following paragraph, a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

15. Claim 6 is rejected under 35 U.S.C. 112, fourth paragraph.

Claim 6 is not within the scope of claim 1. Claim 6 is drawn to the treatment of a different population (animal without any ophthalmologic disorder, disease, or injury). Claim 1 is limited to the treatment of a mammal "in need thereof". Thus the method of claim 6 does not incorporate all of the limitation of claim 1.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 1-2, 7-11, are 23-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Hamilton et al. US 6,331,537 ('537).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

'537 teaches that N-heterocyclic compounds containing a carboxylic acid or carboxylic acid isostere moiety are useful for treating vision disorders and/or improving vision and for treating memory impairment and/or enhancing memory performance (column 8, line 66 to column 14, line 33). The N-heterocyclic compounds contain an acidic moiety or an isostere thereof attached to the 2-carbon of the N-heterocyclic ring. The preferred compounds of formula (I) contain all of the limitations of the compound employed in the instantly claimed method (column 28, line 57 to column 37, line 46). Compounds which are carboxylic acids and isosteres of N-heterocyclic compounds within the scope of formula (I) may possess immunosuppressive, non-immunosuppressive, or other activities. "Vision disorder" refers to any disorder that affects or involves vision, including without limitation visual impairment, orbital

disorders, disorders of the lacrimal apparatus, disorders of the eyelids, disorders of the conjunctiva, disorders of the cornea, cataracts, disorders of the uveal tract, disorders of the optic nerve or visual pathways, free radical induced eye disorders and diseases, immunologically-mediated eye disorders and diseases, eye injuries, and symptoms and complications of eye disease, eye disorder, or eye injury. Applicant's attention is further directed to columns 27-28 wherein the treatment vision disorders and memory impairment are further contemplated.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

21. Claims 1-4, 6-11 and 23-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton et al. U.S. Patent No. 6,140,357 ('357) in view of Merriam-Webster's Collegiate Dictionary, Deluxe Edition, published by Merriam-Webster (1998), Inc., Springfield, Mass., page 53 (Webster).

The instant claims are drawn to a method for treating a nerve-related vision disorder or treating memory impairment in a mammal in need thereof comprising administering an effective amount of an N-heterocyclic ring compound containing a carboxylic acid or carboxylic acid isostere moiety attached to the 2-carbon of the N-heterocyclic ring.

'357 teaches a novel class of neurotropic compounds having an affinity for FKBP-type immunophilins (column 2, line 55 to column 5 line 62). The preferred compounds shown in column 3 embrace the instantly employed heterocyclic compounds (carboxylic acid isostere) wherein Y is NR_2. The neurotrophic compounds have an affinity for the FK506 binding proteins such as FKBP-12 (column 7, lines 27-34). The '357 patent further teaches that the compounds are useful for treating patients suffering from Alzheimer's disease (column 12, line 4). The treatment of Alzheimer's

disease (see claim 5 of '357) reads upon "treating memory impairment". As interpreted by the instant specification, "memory impairment" embraces "any disorder in which memory deficiency is present" (page 30, lines 17-23). Webster teaches that Alzheimer's disease is a degenerative disease of the central nervous system characterized especially by premature senile mental deterioration. Thus, the instant invention reads on the treatment of mammals having Alzheimer's disease.

The instant invention differs from the '357 patent in that the heterocyclic compounds employed in the methods differ in scope; however, the compounds of the '357 patent contain a N-heterocyclic compound containing a carboxylic acid isostere moiety attached to the 2-carbon of the N-heterocyclic ring. Page 26 of the instant specification teaches that "$-CON(R^3)_2$" is a carboxylic acid isostere. The carbonyl moiety attached to the heterocyclic ring of the '357 patent at the 2-carbon position reads upon a carboxylic acid isostere wherein Y is NR_2. Additionally, claim 3 of the '357 patent explicitly contemplates the use of neurotropic compounds having affinity for FKBP-12 (the instant claim 4 conveys that the heterocyclic compounds containing a carboxylic acid isostere at the 2-carbon position also posses this activity).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a N-heterocyclic compound containing a carboxylic acid isostere moiety attached to the 2-carbon of the N-heterocyclic ring for treating a mammal with a memory impairment such as Alzheimer's patients as taught by '357. The variable Y only reads on O or NR_2 and since the '357 patent explicitly embraces the use of heterocyclic compounds having affinity for FKBP-12, one of ordinary skill in the art would have

readily envisioned the use the instantly recited heterocycle containing a carboxylic acid isostere at the 2-carbon position (i.e. compounds wherein Y is NR_2) for treating a mammal having a memory impairment.

Conclusion

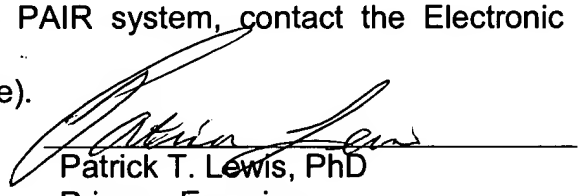
22. Claims 1-4, 6-11 and 23-38 are pending. Claims 1-4, 6-11 and 23-38 are rejected. No claims are allowed.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick T. Lewis whose telephone number is 571-272-0655. The examiner can normally be reached on Monday - Friday 10 am to 3 pm (Maxi Flex).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patrick T. Lewis, PhD
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Art Unit 1623

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